present day conditions it is claimed can only be checked by a system of health insurance, which for a small sum divided among employer, worker and state, will bring medical care to the wage-earner and his family, will assure for a maximum of 26 weeks in a year a weekly payment of 2/3 of wages during the breadwinner's illness and in addition a small benefit should he die. "Compulsory health insurance," concludes the brief, "is an economical means of providing adequately for the sick wage-earner, and will prove a mighty force for the inauguration of a comprehensive campaign for health conservation."

POLIOMYELITIS.*

Thanks to the efforts of Flexner and his coworkers Lewis, Draper, Dochez, together with many others, we have attained a real knowledge of the etiology and natural history of poliomyelitis. In the realm of therapeutics, however, progress up to now has been insignificant. The fact that a very positive immunity is confererd by one attack is foundation for the belief that the development of a curative serum ought to be within the bounds of the possible. Numerous attempts to produce such serum have been made without success; it has been impossible to infect any experimental animals other than monkeys and for the production of immune sera Rhesus Maccacus is impossible.

In recent years the idea of immunizing against some of the unknown viruses such as epidemic parotitis and measles by injecting into contacts the blood serum of patients recovered from the disease, has taken hold and there are in the literature several reports which indicate that a measure of success has followed a trial of this method. Flexner and Lewis demonstrated that the immune sera both from monkeys and humans were therapeutically powerful when injected sub-durally and would protect animals inoculated with a potent virus, while normal serum had no protective powers.

Developing these ideas, Armand Netter has utilized the recovered poliomyelitis patient as a source of curative serum to be used in the treatment of infantile paralysis. He withdraws the blood from a vein, separates the serum and injects from 20 to 40 c.c. into the spinal canal after lumbar puncture and the withdrawal of a like amount of spinal fluid. Netter's reports encourage the hope that at last we have a remedy for this disease that is truly of value. His method is simple, harmless and efficacious and it should receive extended trial by the profession. In the French physicians' trials, success followed the use of serum taken from patients who had had infantile paralysis even so long ago as thirty years.

In order that the method may have a trial in San Francisco the County Medical Society has decided to circularize its members asking them to aid in the preparation of a list of immunes who would be willing on request to supply blood for the treatment of acute cases. Such donors need be known only to their personal physicians and so could be spared unpleasant notoriety. As a matter of course donors would be submitted to the Wassermann and other essential tests. The plan contemplates that each member of the Society shall endeavor to obtain from an individual who has recovered from poliomyelitis the promise that he will act as a blood donor on request of his physician. When he has obtained the promise the physician will communicate the fact to the secretary. The secretary shall keep a list of members who are in touch with prospective donors and shall supply such a list to any other member on request. It will thus be relatively an easy matter to obtain serum promptly for the treatment of an acute case, and prompt treatment is half the battle.

Sophian has reported the use of normal horse serum as an intra-dural injection in the acute stage of poliomyelitis. He is encouraged by his results, which he thinks as good as those which followed a limited trial of Netter's plan of using immune human serum in the same way.

More recently Meltzer has suggested the use of intra-dural injections of adrenalin chloride. He advises that 2 c.c. of the 1 to 1000 solution be injected every four to six hours until the fifth or sixth day after all paralyses have disappeared. In his contribution "The Treatment of Acute Poliomyelitis," which appeared in the *New York Medical Journal,* August 19th, 1916, Meltzer states that this plan of treatment has been tried at the New York Throat, Nose and Lung Hospital with results that at least prove that adrenalin used in this way is harmless. The rationale of this suggested treatment rests upon the distinction Meltzer draws between inflammatory foci and inflammatory areas peripheral to the foci. These areas consist for the most part of zones of edema and hyperemia of a transitory nature. It is his idea that the pathological process involving the vital centers in the nervous system is not always a destructive one but one based upon an edema and hyperemia that it may be possible to disperse by the use of adrenalin in intradural injection.

Meltzer also urges the use of his intrapharyngeal insufflation apparatus when there is threat of asphyxiation during the acute stage of poliomyelitis. Observations on monkeys infected with the disease, made during the stage of asphyxia, convince him that "in cases with paralysis, death is due to a respiratory paralysis from an involvement of the origins of the chief respiratory nerves (phrenic and brachial plexus) while in encephalitic poliomyelitis the vasomotor center may be the first vital point which becomes paralyzed," should the centers escape destruction, but be involved by hyperemia and edema. It is possible that an efficient method of artificial respiration might keep the patient alive until the adrenalin dispersed the edema and hyperemia and aided the centers to attain normal function, and for this Meltzer's advice seems sound and worthy of attention.

* 1. Flexner & Lewis: Jour. A. M. A., Aug. 20, 1910.
2. A. Netter: Arch. de med. d. enfants, Jan. 16, 1916.
3. Sophian: Jour. A. M. A., Aug. 5, 1916.
4. Meltzer: New York Med. Jour., Aug. 19, 1916.